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TOPIC: EPIDEMIOLOGY

(1) Define epidemiology and it's main objectives.

Epidemiology is the study of the distribution and determinants of health- related events, disease or health-related characteristics among populations.

(i) Identify the causes and risk factors of disease

(ii) Determine the distribution and prevalence of disease

(iii) Develop strategies for prevention, control and treatment

(IV) Provide data for public health policy

(2) Differentiate between descriptive and analytically epidemiology, providing one example each.

(i) Descriptive Epidemiology: Describes who, what, where and when (person, place,time) disease pattern occurrence, and the tools include survey, case report, case series, correlation study, cross sectional study incident and prevalence rate.

Example: Tracking the number of malaria cases in a district.

(ii) Analytically Epidemiology: Investigates the why and how disease occur. it also involves test hypotheses about relation between exposure and outcome, cases and control, exposure and unexposure. the tools involves case control study, cohort study and risk ratio.

Example : A case-control study examining the relationship between smoking and lung cancer.

(3) Discuss the components of epidemiology triangle and how they Interact in the spread of infectious disease.

The epidemiology triangle consists of

(i) Agent: The pathogen causing the disease (e.g,

 bacteria, virus)

(ii) Host: The human or animal that harbors the disease

(iii) Environment : The external factors that facilitate disease transmission (e.g, water, air, vectors)

 These components interact to facilitate disease transmission. For example, in malaria. the agent is the plasmodium parasite, the host is the human, and the environment includes the mosquito vectors and stagnant water.

(4) Explain the concept of 'determinants' in epidemiology and give two examples of biological and environmental determinants.

Determinants are factors that influence the occurrence of disease or health-related events.

(1) Biological determinants:

Genetics (e.g, Inherited traits)

Microbiome (e.g, gut bacterial)

(2) Environmental determinants:

Air pollution

Water Quality

(5) Describe the three prevention in public health and provide a real-life example for each.

(i) primary prevention: preventing disease before it occurs.

Example: vaccination against infectious diseases

(ii) Secondary prevention: Dectecting disease early to prevent complications.

Example: Screening of breast cancer through mammography.

(iii) Tertiary prevention: managing disease to prevent further complications.

Example: Rehabilitation programs for patients with heart disease.